

Express Mail No. EV 447 217 425 US
Appl. No. 09/802,835
Reply to Office action of October 6, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (cancelled)
2. (cancelled)
3. (currently amended) An exercise unit comprising:
a frame;
a seat positioned on said frame;
a resistance engine attached to said frame and utilizing elastomeric springs;
an actuator attached to said resistance engine wherein said resistance engine
provides a constant load to a user when said actuator is actuated; and
An exercise unit as defined in claim 1, wherein:
wherein said actuator comprises a cable.
4. (previously presented) An exercise unit as defined in claim 3, wherein:
said cable comprises a cord.
5. (currently amended) An exercise unit comprising:
a frame;
a seat positioned on said frame;
a resistance engine attached to said frame and utilizing elastomeric springs;
an actuator attached to said resistance engine wherein said resistance engine
provides a constant load to a user when said actuator is actuated; and
An exercise unit as defined in claim 1, wherein:
wherein said frame defines a bench; and
said resistance engine is positioned completely below said seat.
6. (original) An exercise unit as defined in claim 3, further comprising:
a spiral pulley positioned between said resistance engine and said cable.

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7. (original) An exercise unit as defined in claim 3, further comprising:
means for modifying said increasing load into a constant load when a user actuates said resistance engine.
8. (original) An exercise unit as defined in claim 7, wherein said means comprises a spiral pulley.
9. (original) An exercise unit comprising:
a frame;
a seat positioned on said frame;
means, attached to said frame, for providing a constant load to a user, said means utilizing resilient bands;
an actuator attached to said means.
10. (original) An exercise unit as defined in claim 9, wherein:
said means are located below said seat.
11. (original) An exercise unit as defined in claim 10, wherein:
said frame defines a bench exercise unit.
12. (original) An exercise unit as defined in 9, wherein:
said means includes a means for pre-loading.
13. (original) A bench exercise unit comprising:
a frame;
a seat positioned on said frame;
a resistance engine utilizing resilient bands and including means for providing a constant load;
at least one movable arm;
an actuator attached to said resistance engine and said arm for use by a user in effecting an exercise motion.
14. (original) A bench exercise unit as defined in claim 13, wherein:
said at least one arm is movable in one dimension.

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15. (original) A bench exercise unit as defined in claim 13, wherein said at least one arm is movable in two dimensions.
16. (original) A bench exercise unit as defined in claim 13, wherein said at least one arm is movable in three dimensions.
17. (previously presented) A bench exercise unit as defined in claim 13, wherein:
 - said actuator comprises a cable; and
 - said cable is attached to said resistance engine by a cable pulley system.
18. (original) A bench exercise unit as defined in claim 17, wherein:
 - said means for providing a constant load is a spiral pulley.
19. (original) A bench exercise unit as defined in claim 13, wherein:
 - said at least one arm includes two arms, one on either side of said bench;
 - means for interconnecting said arms to allow both arms to move upon the repositioning of one of said arms.
20. (original) A bench exercise unit as defined in claim 19, wherein said means for interconnecting said arms is a chain drive mechanism.
21. (original) A bench exercise unit comprising:
 - a frame;
 - a seat positioned on said frame;
 - an adjustable load resistance engine; and
 - wherein a user can personally relocate the exercise unit.
22. (previously presented) An exercise bench comprising:
 - a frame;
 - a seat positioned on said frame;
 - at least one adjustable arm assembly mounted on said frame;
 - a resistance engine attached to said frame;
 - an actuator attached to said resistance engine, the actuator comprising a cable passing through said at least one adjustable arm assembly; and

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positioning means for selectively rotating said at least one adjustable arm assembly and securing said at least one adjustable arm assembly in a desired position.

23. (previously presented) An exercise bench as defined in claim 22, wherein said positioning means is adapted to move to different positions in an approximately 180 degree horizontal arc with respect to said frame.

24. (previously presented) An exercise bench as defined in claim 22, wherein said frame further comprises a lateral support beam and said adjustable arm assembly is attached to said lateral support beam.

25. (previously presented) An exercise bench as defined in claim 22, wherein said at least one adjustable arm assembly is attached to said frame by a pivot structure.

26. (previously presented) An exercise bench as defined in claim 25, wherein said pivot structure is adapted to enable said at least one adjustable arm assembly to move in an approximately 180 degree horizontal arc with respect to said frame.

27. (previously presented) An exercise bench as defined in claim 25, wherein said pivot structure is oriented in a substantially vertical position.

28. (previously presented) An exercise bench as defined in claim 22, wherein said pivot structure is located adjacent a horizontal support surface.

29. (previously presented) An exercise bench as defined in claim 22, wherein said at least one adjustable arm assembly is positioned adjacent a horizontal support surface.

30. (previously presented) An exercise bench as defined in claim 22, wherein said at least one adjustable arm assembly further comprises an arm bracket, an end pulley bracket and a pivot mount attaching said adjustable arm assembly to said frame.

31. (previously presented) An exercise bench as defined in claim 30, wherein said arm bracket further comprises a side plate having a sloped top edge, a vertical side edge and a horizontal bottom edge.

32. (previously presented) An exercise bench as defined in claim 31, wherein said vertical side edge and said horizontal bottom edge are substantially open.

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33. (previously presented) An exercise bench as defined in claim 30 wherein said pivot mount has an open channel for passing said cable therethrough and terminating at said resistance engine.

34. (previously presented) An exercise bench as defined in claim 33, wherein said pivot mount is oriented in a substantially vertical orientation.

35. (previously presented) An exercise bench as defined in claim 30, wherein said end pulley bracket is pivotally attached to said arm bracket to rotate along a horizontal axis in an approximately 180 degree vertical arc.

36. (previously presented) An exercise bench as defined in claim 22, further comprising at least two adjustable arm assemblies.

37. (previously presented) An exercise bench as defined in claim 36, further comprising means for interconnecting said at least two adjustable arm assemblies to move upon the repositioning of one of said adjustable arm assemblies.

38. (previously presented) An exercise bench as defined in claim 37, wherein said means for interconnecting said at least two adjustable arm assemblies is a chain drive mechanism.

39. (previously presented) An exercise bench as defined in claim 22, wherein said positioning means further comprises a positioning plate having a plurality of holes formed therein and a pop-pin attached to said at least one adjustable arm assembly for engagement with said plurality of holes in said positioning plate.

40. (previously presented) A cable system for use in an exercise bench having a resistance engine, an arm assembly, an actuator, and a pulley system comprising:

a first portion of cable connected to said resistance engine and extending in a rearward direction from said resistance engine;

a second portion of cable extending in a first outward direction;

a third portion of cable extending in a downward direction; and

a fourth portion of cable extending in a second outward direction and connecting to said actuator.

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41. (previously presented) A cable system as defined in claim 40, wherein said first, second, third and fourth portions are comprised of a continuous length of cable.

42. (previously presented) A cable system as defined in claim 40, wherein said first and second portions are oriented in a substantially horizontal orientation.

43. (previously presented) A cable system as defined in claim 40, wherein said second portion is oriented at a different angle than said fourth portion.

44. (previously presented) A cable system as defined in claim 40, wherein second portion is oriented approximately 45 degrees outward from said first portion.

45. (previously presented) A cable system as defined in claim 40, wherein said third portion is oriented in a substantially vertical position.

46. (previously presented) A cable system as defined in claim 40, wherein said fourth portion is oriented approximately 90 degrees outward from said third portion.

47. (previously presented) A cable system as defined in claim 40, wherein said fourth portion is oriented in a substantially horizontal position.

48. (previously presented) A cable system as defined in claim 40, wherein said fourth portion is oriented approximately 90 degrees outward from said first portion.

49. (previously presented) A cable system as defined in claim 40, wherein said second portion is oriented at a different angle from said fourth portion.

50. (previously presented) A cable system as defined in claim 40, wherein said third portion is oriented approximately 90 degrees downward from said second portion.

51. (previously presented) A cable/pulley system for use in an exercise bench having a resistance engine, an arm assembly, an actuator, a fairlead, a top pulley, a corner pulley and an end pulley, said system comprising:

a first portion of cable connected to said resistance engine and extending in a rearward direction from said resistance engine to said fairlead;

a second portion of cable extending in a first outward direction from said fairlead to said top pulley;

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a third portion of cable extending in a downward direction from said top pulley to said corner pulley;

a fourth portion of cable extending in a second outward direction from said corner pulley to said end pulley; and

a fifth portion of cable extending from said end pulley to said actuator.

52. (previously presented) A cable/pulley system as defined in claim 51, wherein said first, second, third, fourth and fifth portions of cable are comprised of a continuous length of cable.

53. (previously presented) A cable/pulley system as defined in claim 51, wherein said first and second portions of cable are oriented in a substantially horizontal orientation.

54. (previously presented) A cable/pulley system as defined in claim 51, wherein said second portion is oriented at a different angle than said fourth portion.

55. (previously presented) A cable/pulley system as defined in claim 51, wherein said second portion is oriented approximately 45 degrees outward from said first portion.

56. (previously presented) A cable/pulley system as defined in claim 51, wherein said third portion of cable is oriented in a substantially vertical position.

57. (previously presented) A cable/pulley system as defined in claim 51, wherein said fourth portion is oriented approximately 90 degrees outward from said third portion.

58. (previously presented) A cable/pulley system as defined in claim 51, wherein said fourth portion is oriented in a substantially horizontal position.

59. (previously presented) A cable/pulley system as defined in claim 51, wherein said fourth portion is oriented approximately 90 degrees outward from said first portion.

60. (previously presented) A cable/pulley system as defined in claim 51, wherein said second portion is oriented at a different angle from said fourth portion.

61. (previously presented) A cable/pulley system as defined in claim 51, wherein said third portion is oriented approximately 90 degrees downward from said second portion.

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62. (previously presented) A cable/pulley system as defined in claim 51, wherein said resistance engine further comprises a spiral pulley.

63. (previously presented) A cable/pulley system as defined in claim 51, wherein said fourth portion is located adjacent a horizontal support surface.

64. (previously presented) An isotonic energy providing system for use in connection with an exercise bench comprising:

a resistance engine;

a constant load mechanism connected to said resistance engine;

a cable/pulley system connected to said resistance engine through said constant load mechanism such that when said cable/pulley system is utilized by a user, an approximately isotonic load is provided from said resistance engine to said user.

65. (previously presented) An isotonic energy providing system as claimed in claim 64, wherein said isotonic delivery mechanism is a spiral pulley.

66. (previously presented) An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 65, wherein said spiral pulley further comprises a large radius, a small radius and a spiral track, said spiral track being adapted to receive a length of cable from said cable/pulley system, said length of cable being wrapped from said small radius within said spiral track and attached to said large radius.

67. (previously presented) An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately +/- 5 pounds at a pre-load of zero on said resistance engine.

68. (previously presented) An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately +/- 4 pounds at a pre-load of approximately 14 pounds on said resistance engine.

69. (previously presented) An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately +/- 3 pounds at a pre-load of approximately 37 pounds on said resistance engine.

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70. (previously presented) An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately +/- 1 pound at a pre-load of approximately 57 pounds on said resistance engine.

71. (previously presented) An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately +/- 10 pounds at a pre-load of approximately 80 pounds on said resistance engine.

72. (previously presented) An isotonic energy providing system for use in connection with an exercise bench as claimed in claim 64, wherein said isotonic load is approximately +/- 10 pounds at a pre-load of approximately 100 pounds on said resistance engine.

73. (previously presented) An actuator as defined in claim 3, wherein:
said actuator further comprises a handle coupled to said cable.

74. (previously presented) An actuator as defined in claim 22, wherein:
said actuator further comprises a handle coupled to said cable.

75. (previously presented) An actuator as defined in claim 40, wherein:
said actuator comprises a handle coupled to said fourth portion of cable.

76. (previously presented) An actuator as defined in claim 51, wherein:
said actuator comprises a handle coupled to said fifth portion of cable.